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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,341	12/19/2005	Teruhisa Shibahara	36856.1378	5954

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EXAMINER

TAKAOKA, DEAN O

ART UNIT	PAPER NUMBER
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2817

NOTIFICATION DATE	DELIVERY MODE
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03/19/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/561,341	Applicant(s) SHIBAHARA ET AL.	
	Examiner DEAN O. TAKAOKA	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-17 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-11 and 14-17 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/19/05, 2/1/07, 6/20/08</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

The drawings are objected to because the indicia in Figs. 4A, 4B and 4C do not appear to meet the requirements under § 1.84 (p3).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8 – 11, 14, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Takamine et al. (US 6,781,478).

Claim 8: Takamine (Fig. 8 et al.) shows an elastic wave filter comprising: two longitudinally coupled resonator type elastic wave filter elements, each longitudinally coupled resonator type elastic wave filter element including three IDTs (both labeled 201-203) arranged on a piezoelectric substrate in a transmitting direction of an elastic wave; wherein two IDTs of one longitudinally coupled resonator type elastic wave filter element are cascade connected to two IDTs of the other longitudinally coupled resonator type elastic wave filter element (201(upper) to 201(lower) and 203(upper) to 203(lower)); and in at least one of the longitudinally coupled resonator type elastic wave filter elements, electrode fingers of one or two of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of electrode fingers of a remaining IDT that is not cascade connected (where the electrode fingers of the center IDT 202 measure approximately 3mm for the central fingers and 4, 5mm for the outer fingers and where the electrode fingers of the outer IDTs 201 and 202 measure approximately 2mm; thus 202 having a larger pitch than 201 and 202), such that a frequency of a conductance peak in said one or two of the cascade connected IDTs is higher than a frequency of a conductance peak in the remaining IDT (inherent where the structure of electrode pitch is analogous to Applicants inherently comprising the same conductance peak characteristic).

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Claim 9: The elastic wave filter according to Claim 8, wherein in each of the longitudinally coupled resonator type elastic wave filter elements, the electrode fingers of said one or two of the IDTs that are cascade connected are arranged at a pitch that is smaller than a pitch of the electrode fingers of the remaining IDT (discussed in the reasons for rejection of claim 1 above).

Claim 10: The elastic wave filter according to Claim 8, wherein a relative dielectric constant of the piezoelectric substrate is about 30 or more (inherent; e.g. LiTaO₃ - col. 4, ln 49 and col. 6, lns 33-39).

Claim 11: The elastic wave filter according to Claim 8, wherein the electrode fingers of the cascade connected IDTs are arranged at a pitch of about 2.108 μm (where the term “about” is broad where the IDT wavelength $\lambda_l = 2.03\mu\text{m}$ corresponding to pitch – col. 5, ln 11).

Claim 14: The elastic wave filter according to Claim 8, wherein a center frequency of a passband of the filter is about 500 MHz or more (Fig. 4 and col. 6, lns 8-10).

Claim 15: The elastic wave filter according to Claim 8, wherein the elastic wave filter is a surface acoustic wave filter, wherein the IDTs are aligned in a transmitting direction of a surface acoustic wave (Fig 8 in view of terminals in Fig. 9).

Claim 17: A communication device comprising the elastic wave filter according to Claim 8 (Fig. 21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being obvious over Takamine et al. in view of Funasaka (US 7,245,193).

Takamine teaches the elastic wave filter comprising: two longitudinally coupled resonator type elastic wave filter elements wherein the IDTs are aligned in a transmitting direction of an elastic wave between the piezoelectric substrate (discussed in the reasons for rejection of claims above) but is silent where the elastic wave filter is an elastic boundary wave filter, the elastic boundary wave filter further comprising a thin film disposed on the piezoelectric substrate, the thin film having an elastic constant or a density that is different from that of the piezoelectric substrate.

Funasaka teaches an elastic wave device comprising a thin film (8) disposed on the piezoelectric substrate (4), the thin film having an elastic constant or a density that is different from that of the piezoelectric substrate (obvious where the thin film is SiO, SiN, AlO et al. – col. 6, lns 39, 40 and the piezoelectric substrate is a different material – col. 5, lns 32-36 obviously having a different elastic constant or a density).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the elastic wave filter disclosed by Takamine et al. with the boundary thin film disclosed by Funasaka. Such a modification would have been obvious where boundary thin films are well-known in the art and where Funasaka

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would have realized the advantage of providing protection and improvement for temperature characteristics (col. 6, lns 52-55) thus suggesting the obviousness of the modification.

Allowable Subject Matter

Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEAN O. TAKAOKA whose telephone number is (571)272-1772. The examiner can normally be reached on 9:00a - 5:30p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dean O Takaoka/
Primary Examiner, Art Unit 2817